

Chapter 2.6 Utah Lake-Jordan River Watershed Management Unit Assessment

2.6.1 Introduction

The Utah Lake-Jordan River Watershed Management Unit lies in north-central Utah and includes those streams that drain into Utah Lake and the Jordan River and its tributaries from Utah Lake to the Great Salt Lake. Utah Lake receives water from the Provo and Spanish Fork Rivers, and numerous tributaries that drain the Wasatch Mountains around it. In addition, the Duchesne Tunnel and Weber River diversions empty into the Provo River and a third diversion carries Strawberry Reservoir water into the lake via Diamond Fork and Spanish Fork Rivers. There are numerous streams that drain the Wasatch and Oquirrh Mountain ranges that flow into the Jordan River. Some of these streams are Little Cottonwood Creek, Big Cottonwood Creek, and Bingham Canyon Creek.

This management unit includes all streams located in the U.S.G.S Hydrological Units (HUCs) listed in Table 2.6-1 and is located in the north central part of the state.

Table 2.6-1 Hydrological Unit Codes and Names

Hydrological Unit Code	Hydrological Unit Name
16020201	Utah Lake
16020202	Spanish Fork
16020203	Provo
16020204	Jordan

2.6.2 Water Quality Assessment Results

Assessments were made using data from January 1, 2002 through December 31, 2007. The intensive survey data were used in the 2006 assessment. The majority of the Jordan River / Utah Lake Watershed is monitored annually. The DWQ, Salt Lake City, Salt Lake County, United States Geological Survey and the Provo River Committee collect data annually for a variety of reasons. These data are compared to the State standards to determine beneficial use support. In addition, benthic macroinvertebrate data are used to assess the aquatic life beneficial use classification (Chapter 2.15). The designated beneficial use for rivers and streams is mapped in Figure 2.6-2

2.6.2.1 Overall Beneficial Use Support

There are an estimated 1,314 perennial stream miles within the Utah Lake-Jordan River Watershed Management Unit.

Of the miles assessed, 842.7 (79.2%) are supporting at least one beneficial use, 221.8 (20.8%) miles were not supporting at least one designated beneficial use (Figure 2.6-1).

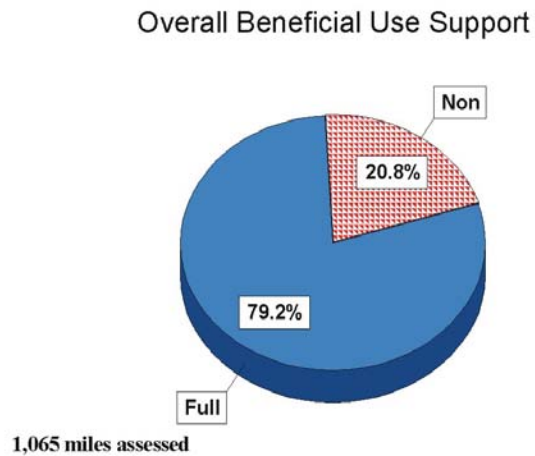


Figure 2.6-1 Overall Beneficial Use Support

2.6.2.2 Beneficial Use Assessment by Categories

A list of the categories and the stream miles included in each of the assessment categories is in Table 2.6-2. Figure 2.6-3 is a map of the beneficial use assessment for the rivers and streams.

Table 2.6-2 Stream Miles by Assessment Category – Jordan River/Utah Lake Watershed Management Unit

Category	Category Definition	Stream Miles
1	All beneficial uses assessed, all fully supported.	47.34
2	Beneficial uses assessed are fully supported.	789.96
3A	No data or insufficient data to make an assessment.	105.47
3B	Lakes that are not supported for one cycle only.	
3C	Insufficient data to assess but an assessment plan is in place.	
4A	Approved TMDL	39.95
4B	Pollution control requirements are expected to result in full beneficial use support in near future.	
4C	Impaired by pollution, no TMDL required.	32.51
5	Impaired by pollutant, TMDL required.	156.72

2.6.2.3 Individual Use Support

The individual support by class is listed in the following table. The miles and percentage of support listed.

Table 2.6-3 Individual Beneficial Use Support Summary Jordan River/Utah Lake Watershed

Management Unit (Stream Miles)

	Size	Size Fully	Size Not	
	Assessed	Supporting	Supporting	Totals
Use				
Drinking Water	418.54	414.45	4.09	418.54
Fish Consumption	0.00	0.00	0.00	0.00
Swimming	118.03	96.94	21.09	118.03
Secondary Contact	118.03	96.94	21.09	118.03
Aquatic Life	1,092.64	902.74	189.90	1,092.64
Agricultural	948.21	893.31	54.90	948.21
	1,032.36	837.30	195.06	1,032.36
Drinking Water				
Fish Consumption		99.0%	1.0%	100.0%
Swimming		0	0	0
Secondary Contact		82.1%	21.8%	100.0%
Aquatic Life		82.1%	21.8%	100.0%
Agricultural		82.6%	21.0%	100.0%
		94.2%	6.1%	100.0%

2.6.2.4 Total Waters Impaired by Various Causes

The causes of impairment are listed in Table 2.6-4. The causes of impairment are temperature, flow and habitat alterations, total dissolved solids, metals, nutrients (total phosphorus), sediments, dissolved oxygen, and pathogens. The percent of miles impacted are illustrated in Figure 2.6-4. The relative contribution of each cause to water quality impairment is illustrated in Figure 2.6-5.

2.6.2.5 Total Waters Impaired by Various Sources

The major sources of impairment are unknown sources, hydromodification, urban runoff, industrial and municipal point sources, habitat modifications, agricultural activities, resource extraction and natural sources illustrated in Figure 2.6-6. The relative percent impairment by sources is illustrated in Figure 2.6-7.

2.6.2.6 Impaired Assessment Units

Table 2.6-6 is a list of the impaired waters in the Jordan River/Utah Lake Watershed Management Unit.

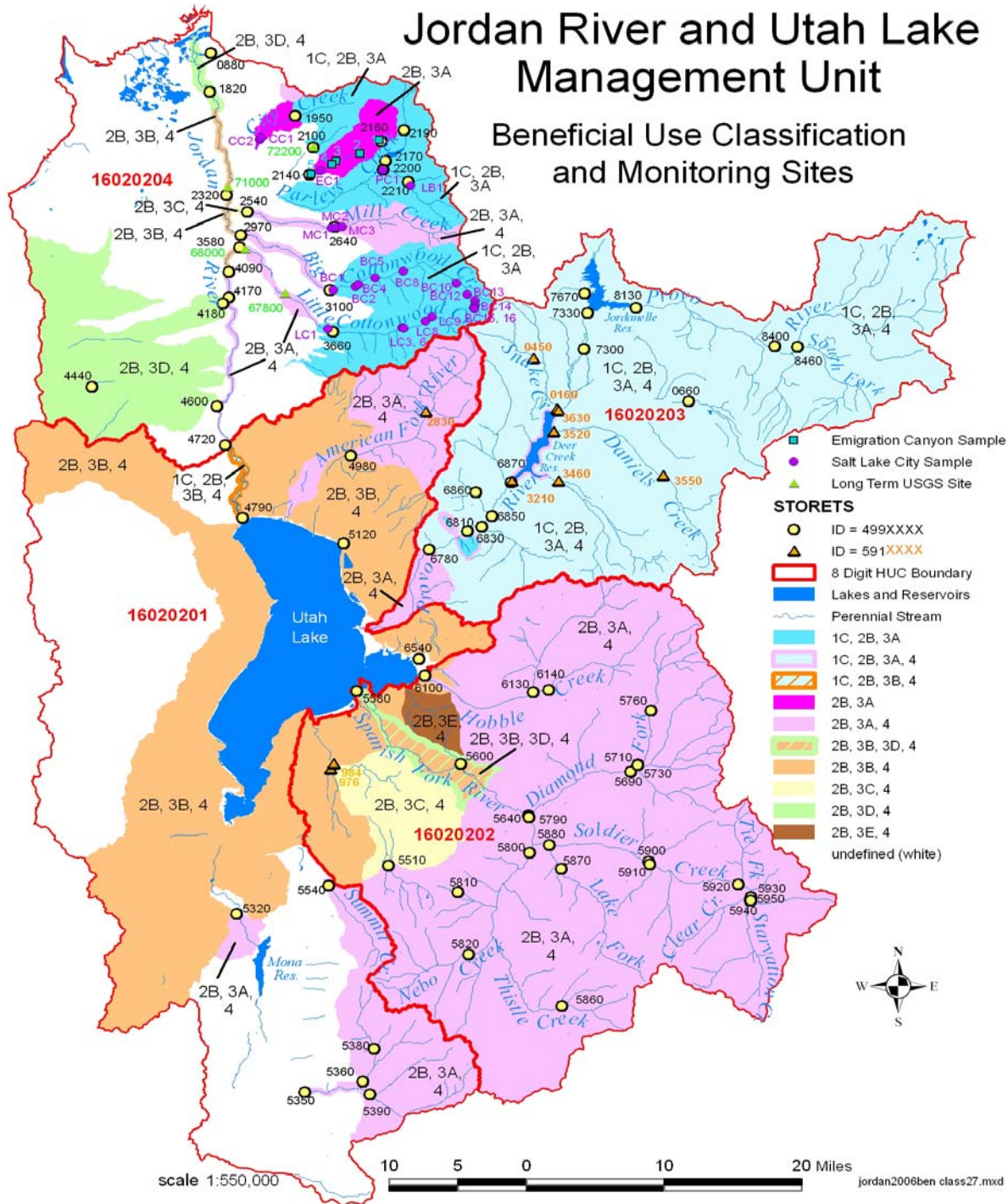


Figure 2.6-2 Beneficial use classifications – Jordan River/Utah Lake Watershed Management Unit

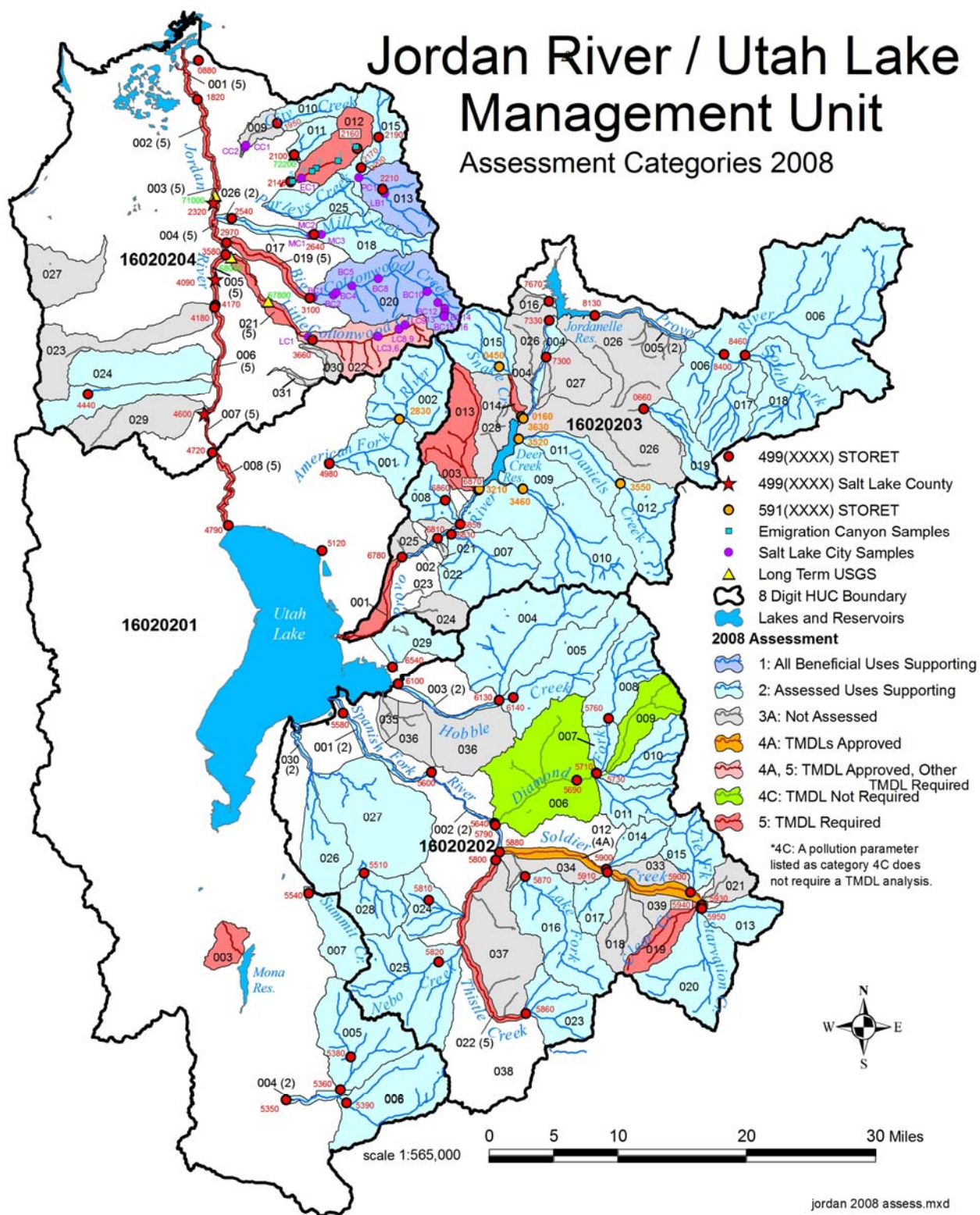


Figure 2.6-3 Beneficial use assessment by category -Jordan River/Utah Lake Watershed Management

Unit

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Table 2.6-4 Total Waters Impaired by Various Cause Categories - Jordan River/Utah Lake Watershed Management Unit

Table 2.6-4. Total Waters Impaired by Various Cause Categories - Jordan River/Utah Lake Watershed Management Unit.	
Cause Category	Stream Miles
Benthic macroinvertebrate assessment impairment	60.31
E. coli	17.65
Flow Alteration	32.51
Metals	25.58
Organic Enrichment/Low DO	16.26
Other Habitat Alterations	32.51
pH	3.44
Radiation	
TDS	51.46
Siltation	18.46
Temperature	40.87
Total Phosphorus	22.66
Unionized Ammonia	

Table 2.6-5 Total Waters Impaired by Various Sources – Jordan River/Utah Lake Watershed Management Unit

Table 2.6-5. Total Waters Impaired by Various Sources - Jordan River/Utah Lake Watershed Management Unit.	
Source Category	Stream Miles
Agriculture	48.83
Aquaculture	
Construction	
Drought	
Habitat Modification (other than Hydromodification)	32.51
Hydromodification	50.97
Industrial Point Sources	44.88
Land Development	
Municipal Point Sources	44.88
Natural Sources	17.65
Resource Extraction	21.49
Septic	4.29
Source Unknown	105.27
Sources outside State Jurisdiction or Borders	
Urban Runoff/Storm Sewers	62.6

Percent of Stream Miles Affected By Causes

2008 Integrated Report Assessment - Jordan River/Utah Lake

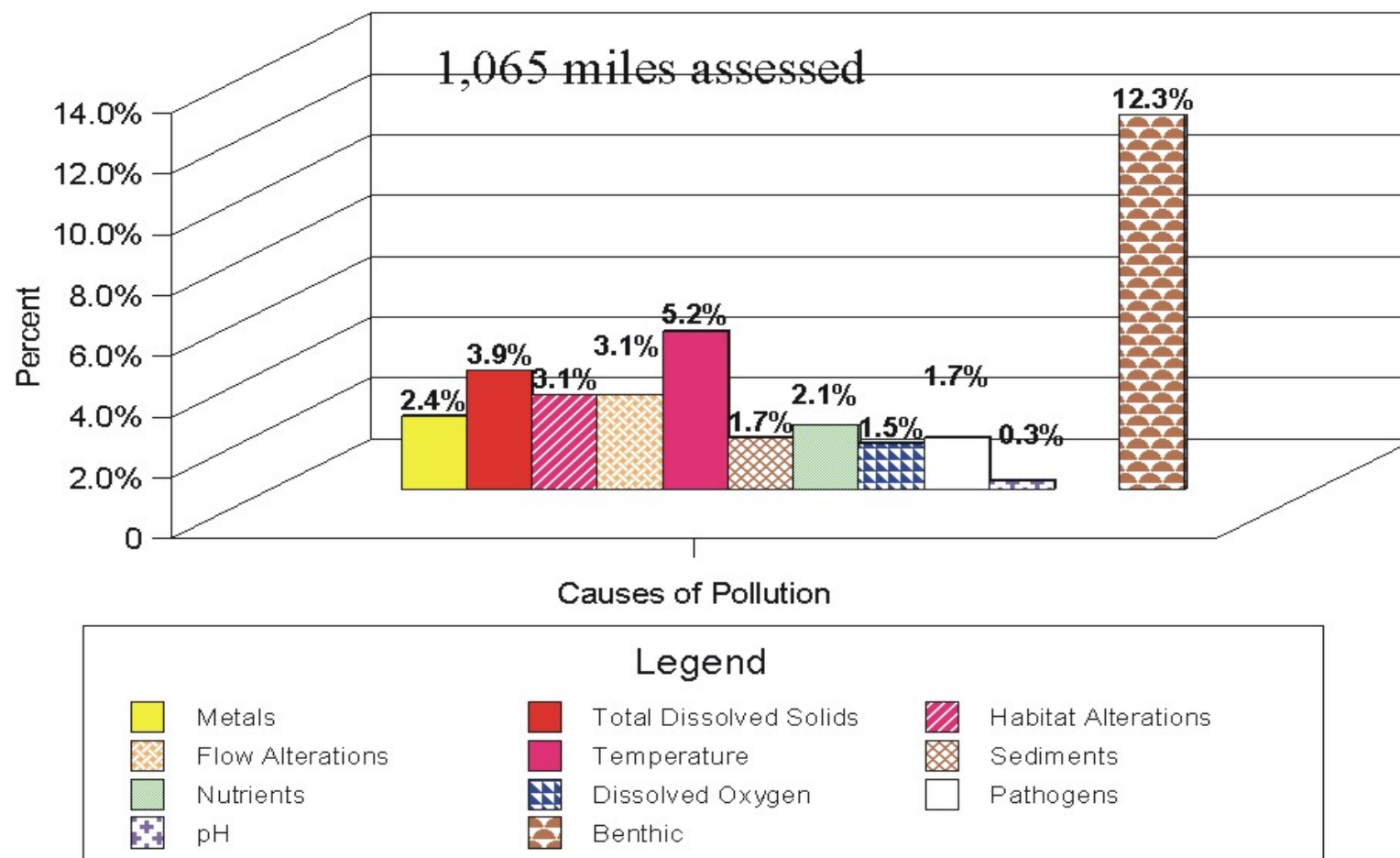


Figure 2.6-4 Percent of stream miles impacted by various causes – Jordan River / Utah Lake Watershed Management Unit

Causes of Stream Water Quality Impairments

2008 Integrated Report Assessment - Jordan River / Utah Lake

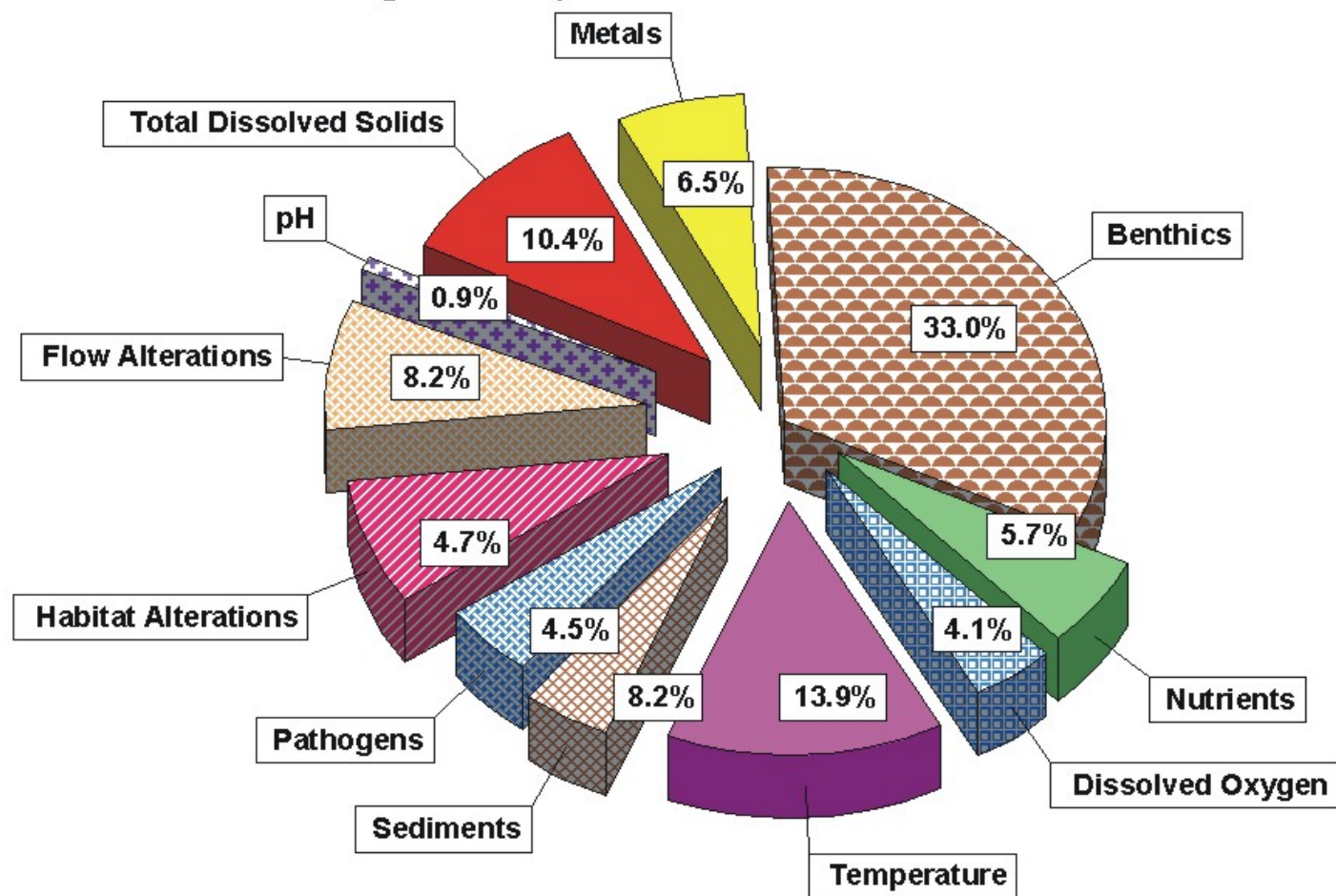


Figure 2.6-5 Relative percent impacted by causes on water quality – Jordan River / Utah Lake Watershed Management Unit

Percent of Stream Miles Affected By Sources

2008 Integrated Report Assessment - Jordan River / Utah Lake

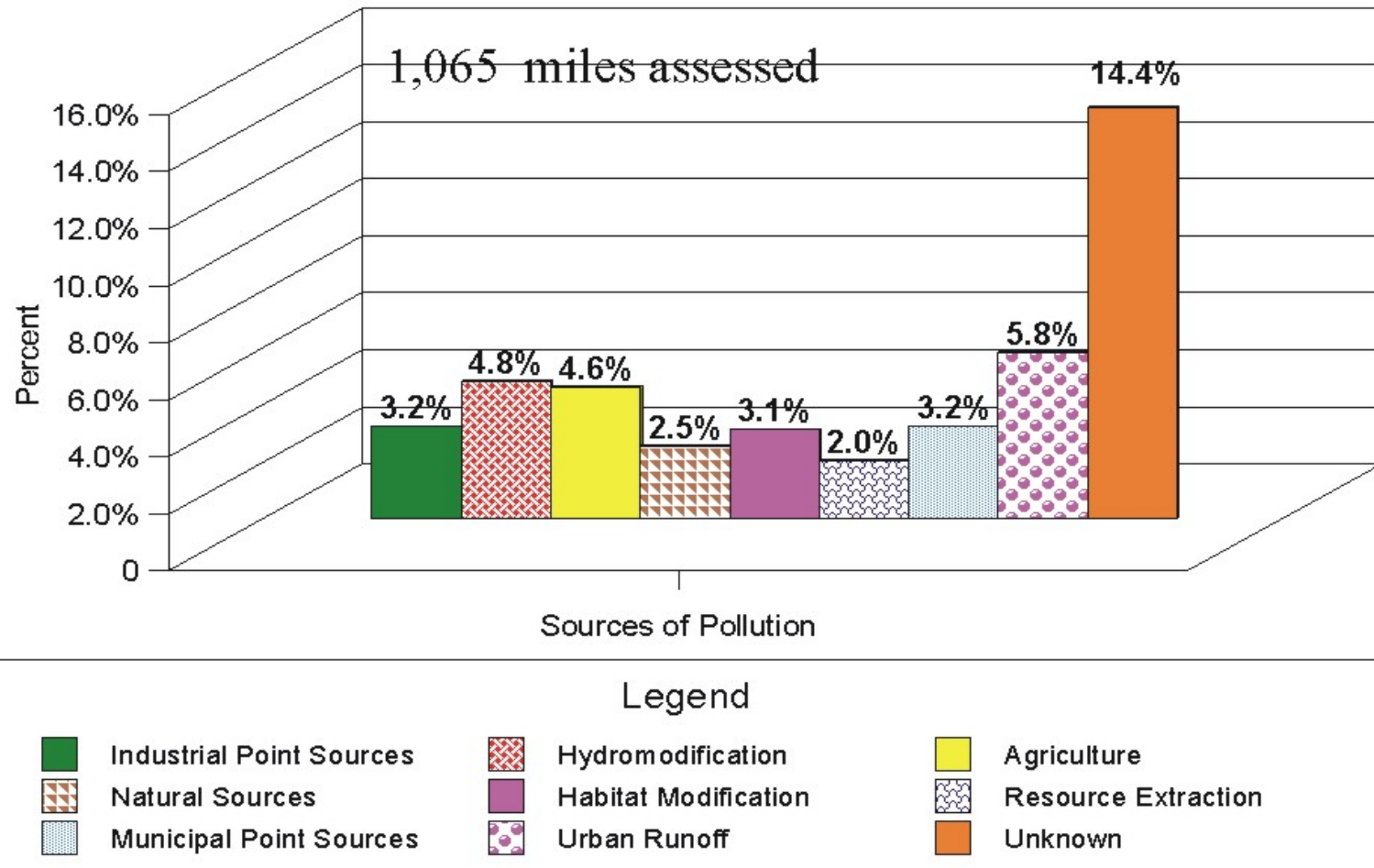


Figure 2.6-6 Percent of assessed stream miles impacted by various sources – Jordan River / Utah Lake Watershed Management Unit

Sources of Stream Water Quality Impairment

2008 Integrated Report Assessment - Jordan River / Utah Lake

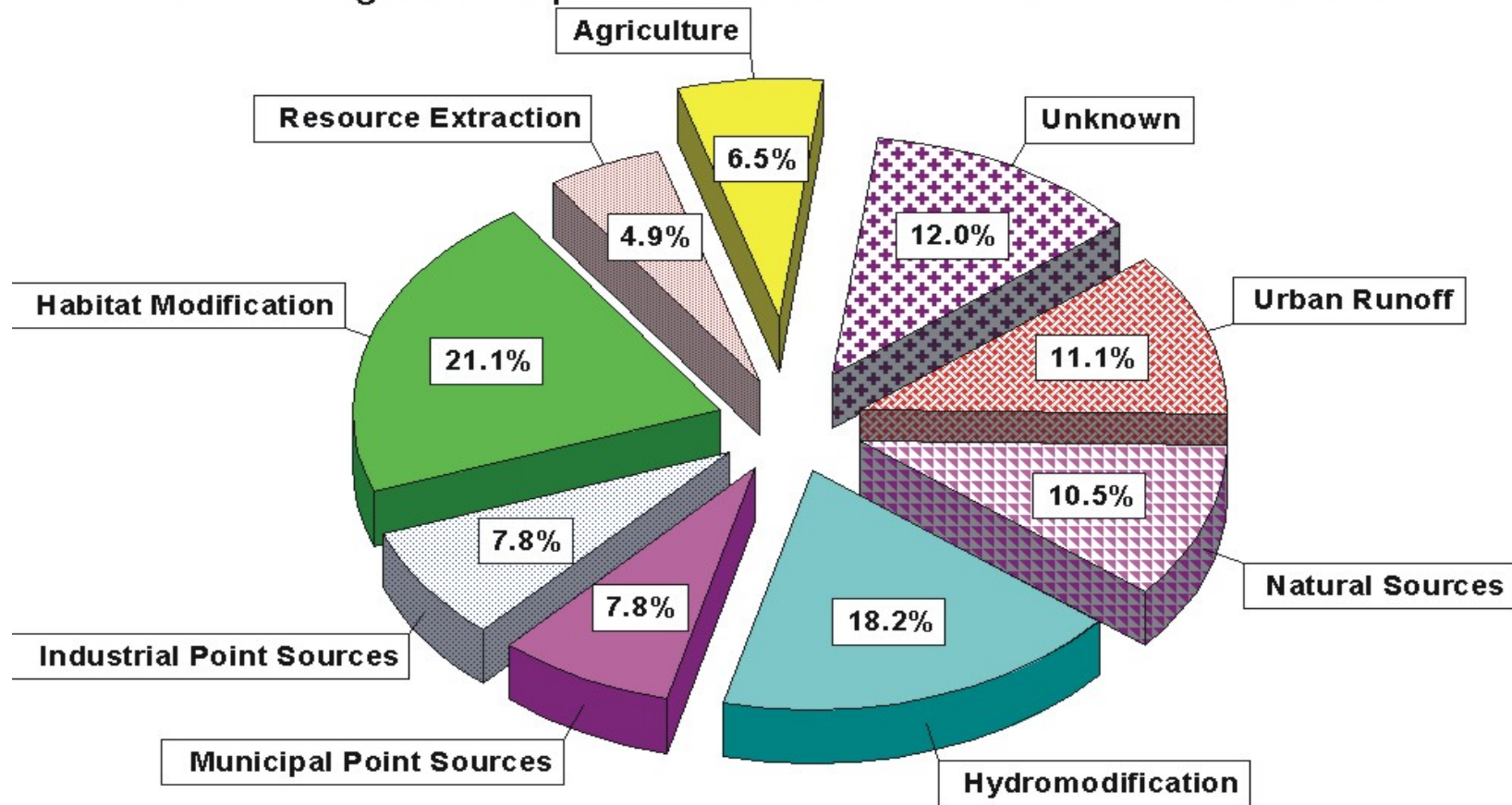


Figure 2.6-7 Relative percent impact by various sources on water quality – Jordan River / Utah Lake Watershed Management Unit

Table 2.6-6 Impaired Waters Located in the Jordan/Utah Lake Watershed Management Unit

	Assessment	Assessment	Assessment	Beneficial Use	Beneficial		Pollutant	
	Unit	Unit	Unit	Class	Use	Support	Or	Stream
	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
Jordan River/ Utah Lake	UT16020201-003	Currant Creek	Current Creek from mouth of Goshen Canyon to Mona Reservoir	2B	NS	5	pH	3.44
Jordan River/ Utah Lake	UT16020201-003	Currant Creek	Current Creek from mouth of Goshen Canyon to Mona Reservoir	3A	NS	5	pH	3.44
Jordan River/ Utah Lake	UT16020201-003	Currant Creek	Current Creek from mouth of Goshen Canyon to Mona Reservoir	3A	NS	5	Temperature	3.44
Jordan River/ Utah Lake	UT16020201-003	Currant Creek	Current Creek from mouth of Goshen Canyon to Mona Reservoir	4	NS	5	pH	3.44
Jordan River/ Utah Lake	UT16020201-008	Jordan river-8	Jordan River from Narrows to Utah Lake	4	NS	5	TDS	14.15
Jordan River/ Utah Lake	UT16020202-019	Clear Creek	Clear Creek and tributaries from confluence with Soldier Creek to headwaters	3A	NS	5	Benthic macroinvertebrate assessment impairment	12.63
Jordan River/ Utah Lake	UT16020202-022	Thistle Creek-1	Thistle Creek from confluence with Soldier Creek to confluence with Little Clear Creek	3A	NS	5	Benthic macroinvertebrate assessment impairment	18.28
Jordan River/ Utah Lake	UT16020203-001	Provo River-1	Provo River from Utah Lake to Murdock Diversion	3A	NS	5	Benthic macroinvertebrate assessment impairment	10.26
Jordan River/ Utah Lake	UT16020203-013	Provo Deer Creek	Provo Deer Creek and tributaries from confluence with Provo River to headwaters	3A	NS	5	Benthic macroinvertebrate assessment impairment	19.14
Jordan River/ Utah Lake	UT16020203-014	Snake Creek-1	Snake Creek from confluence with Provo River to Wasatch Mountain State Park Golf Course	1C	NS	5	Arsenic	4.09
Jordan River/ Utah Lake	UT16020204-001	Jordan River-1	Jordan River from Farmington Bay upstream contiguous with the Davis County line	3B	NS	5	Dissolved Oxygen	7.6
Jordan River/ Utah Lake	UT16020204-002	Jordan River-2	Jordan River from Davis County line upstream to North Temple Street	2B	NS	5	E. coli	4.46
Jordan River/ Utah Lake	UT16020204-002	Jordan River-2	Jordan River from Davis County line upstream to North Temple	3B	NS	5	Dissolved Oxygen	4.46

	Assessment	Assessment	Assessment	Beneficial Use	Beneficial		Pollutant	
	Unit	Unit	Unit	Class	Use	Support	Or	Stream
	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
			Street					
Jordan River/ Utah Lake	UT16020204-003	Jordan River-3	Jordan River from North Temple to 2100 South	2B	NS	5	E. coli	4.2
Jordan River/ Utah Lake	UT16020204-003	Jordan River-3	Jordan River from North Temple to 2100 South	3B	NS	5	Dissolved Oxygen	4.2
Jordan River/ Utah Lake	UT16020204-003	Jordan River-3	Jordan River from North Temple to 2100 South	3B	NS	5	Total Phosphorus	4.2
Jordan River/ Utah Lake	UT16020204-004	Jordan River-4	Jordan River from 2100 South to the confluence with Little Cottonwood Creek	4	NS	5	TDS	9.41
Jordan River/ Utah Lake	UT16020204-005	Jordan River-5	Jordan River from the confluence with Little Cottonwood Creek to 7800 South	2B	NS	5	E. coli	4.7
Jordan River/ Utah Lake	UT16020204-005	Jordan River-5	Jordan River from the confluence with Little Cottonwood Creek to 7800 South	3A	NS	5	Temperature	4.7
Jordan River/ Utah Lake	UT16020204-005	Jordan River-5	Jordan River from the confluence with Little Cottonwood Creek to 7800 South	4	NS	5	TDS	4.7
Jordan River/ Utah Lake	UT16020204-006	Jordan River-6	Jordan River from 7800 South to Bluffdale	3A	NS	5	Temperature	10.29
Jordan River/ Utah Lake	UT16020204-006	Jordan River-6	Jordan River from 7800 South to Bluffdale	4	NS	5	TDS	10.29
Jordan River/ Utah Lake	UT16020204-007	Jordan River-7	Jordan River from Bluffdale to Narrows	3A	NS	5	Temperature	4.18
Jordan River/ Utah Lake	UT16020204-007	Jordan River-7	Jordan River from Bluffdale to Narrows	4	NS	5	TDS	4.18

	Assessment	Assessment	Assessment	Beneficial Use	Beneficial		Pollutant	
	Unit	Unit	Unit	Class	Use	Support	Or	Stream
	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
Jordan River/ Utah Lake	UT16020204-012	Emigration Creek	Emigration Creek and tributaries from Foothill BLVD to headwaters	2B	NS	5	E. coli	4.29
Jordan River/ Utah Lake	UT16020204-019	Big Cottonwood Creek-1	Big Cottonwood Creek and tributaries from Jordan River to Big Cottonwood WTP	3A	NS	5	Temperature	9.53
Jordan River/ Utah Lake	UT16020204-021	Little Cottonwood Creek-1	Little Cottonwood Creek and tributaries from Jordan River confluence to Metropolitan WTP	3A	NS	5	Temperature	8.73
Jordan River/ Utah Lake	UT16020204-021	Little Cottonwood Creek-1	Little Cottonwood Creek and tributaries from Jordan River confluence to Metropolitan WTP	4	NS	5	TDS	8.73
Jordan River/ Utah Lake	UT16020204-022	Little Cottonwood Creek-2	Little Cottonwood Creek and tributaries from Metropolitan WTP to headwaters	3A	NS	5	Benthic macroinvertebrate impairment	21.5